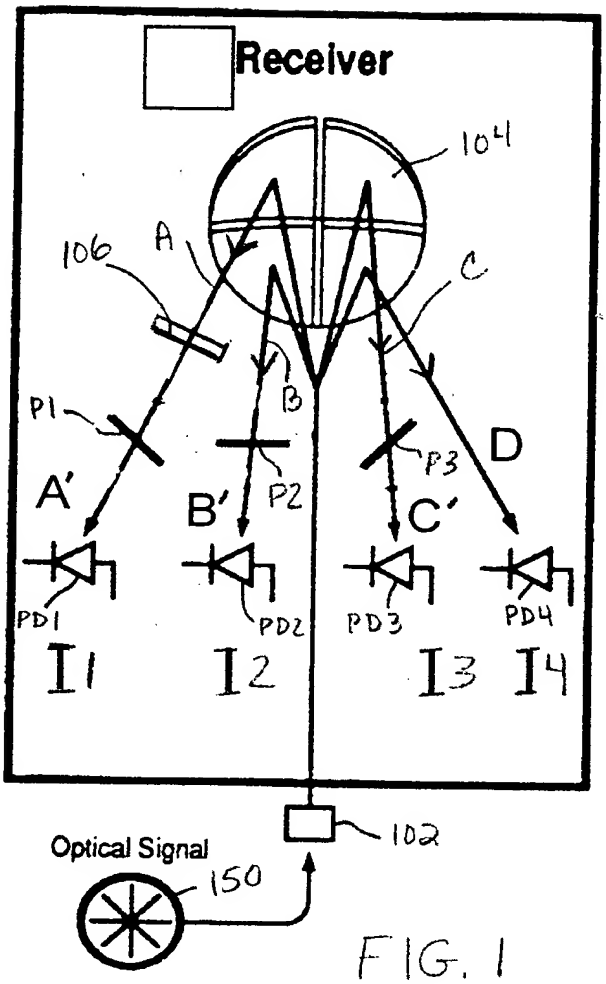
Receiver
104
106
A
C
100
P1
B
P3
D
A'
B'
P2
C'
PD1
PD2
PD3
PD4
I1
I2
I3
I4
Optical Signal
150
102

FIG. 1

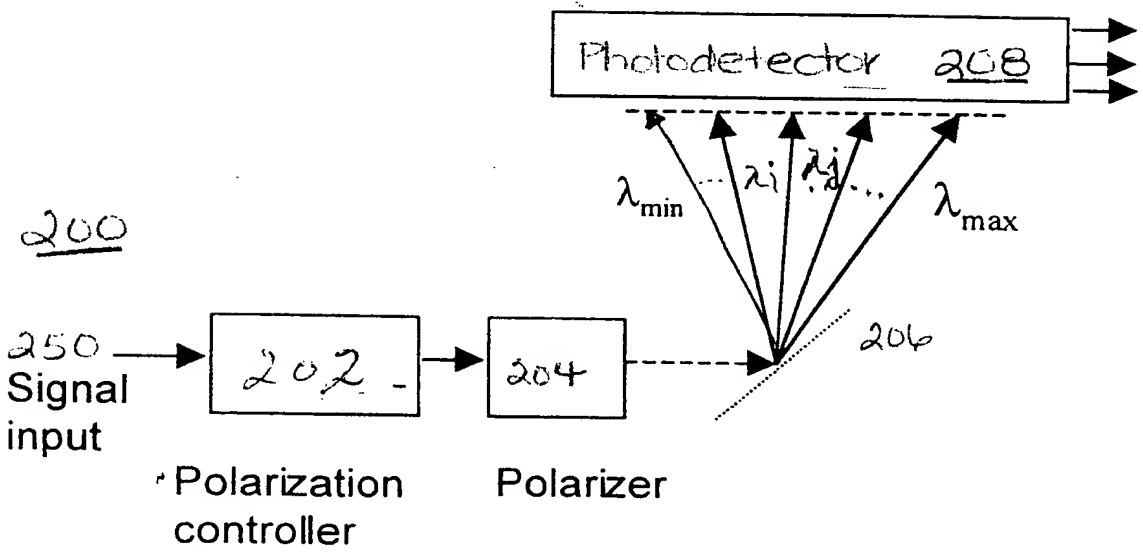
Photodetector 208
λ_{min}
λ_i
λ_j
λ_{max}
200
250
Signal input
202
204
206
Polarization controller
Polarizer

FIG. 2

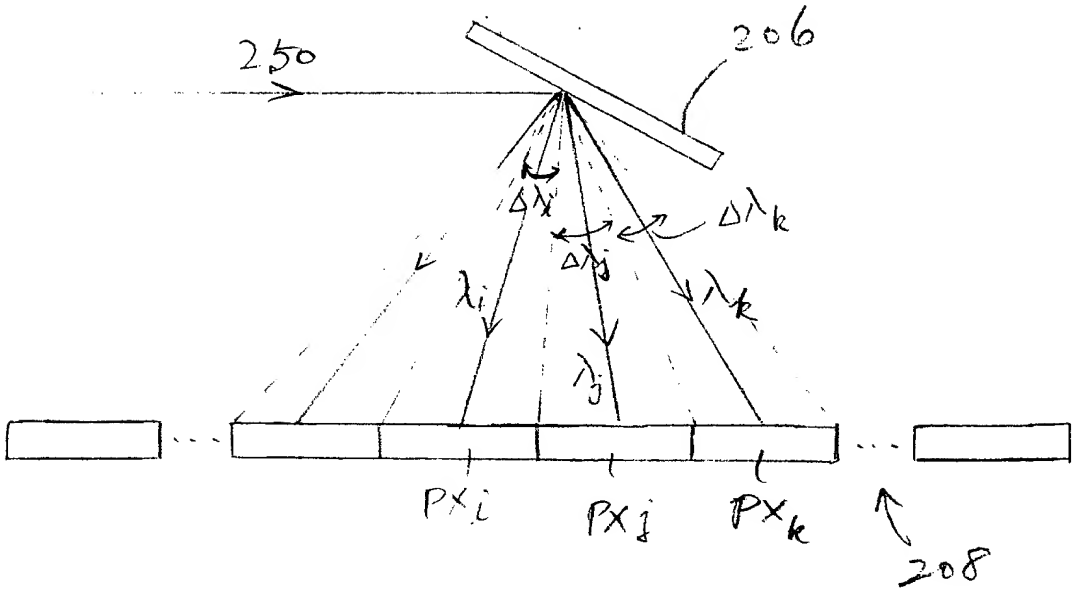
250
206
$\Delta\lambda_i$
$\Delta\lambda_k$
$\Delta\lambda_j$
λ_i
λ_k
λ_j
PX$_i$
PX$_j$
PX$_k$
208

FIG. 3a

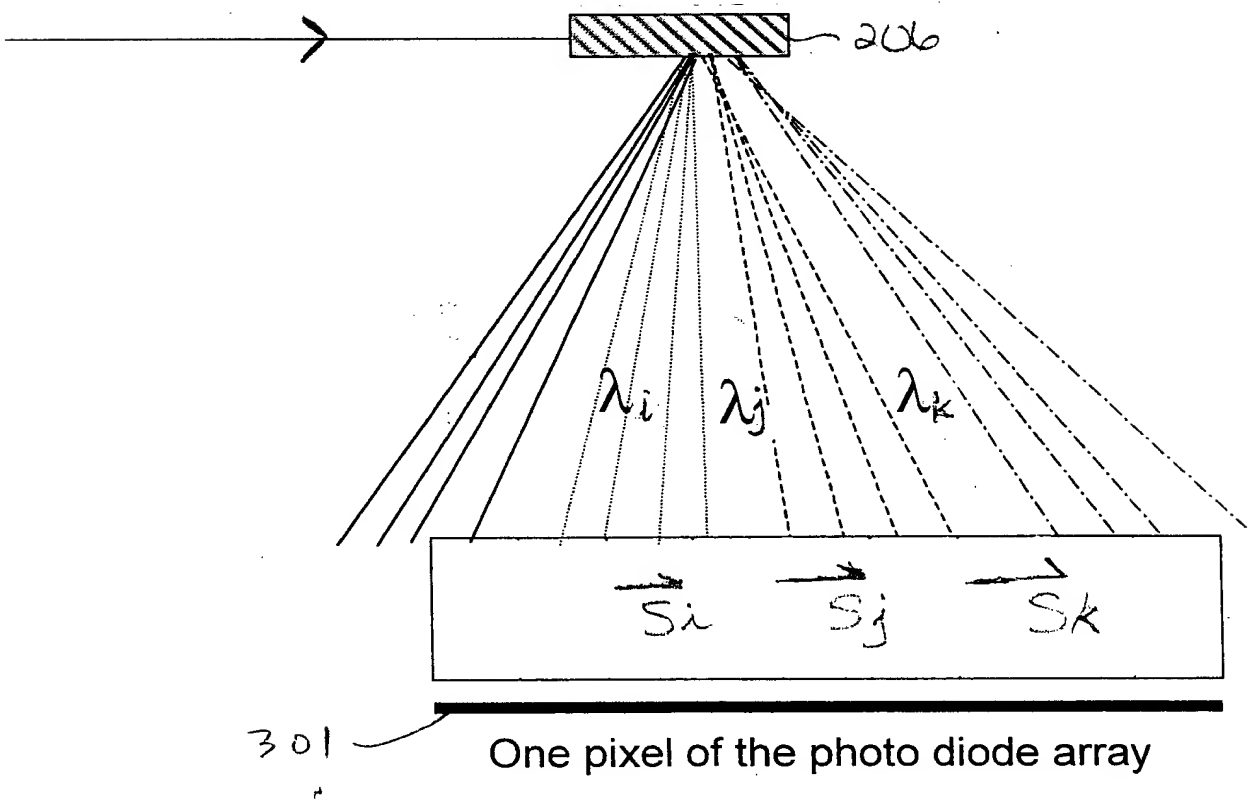
206
λ_i
λ_j
λ_k
$\vec{S}_i$
$\vec{S}_j$
$\vec{S}_k$
301
One pixel of the photo diode array

FIG. 3b

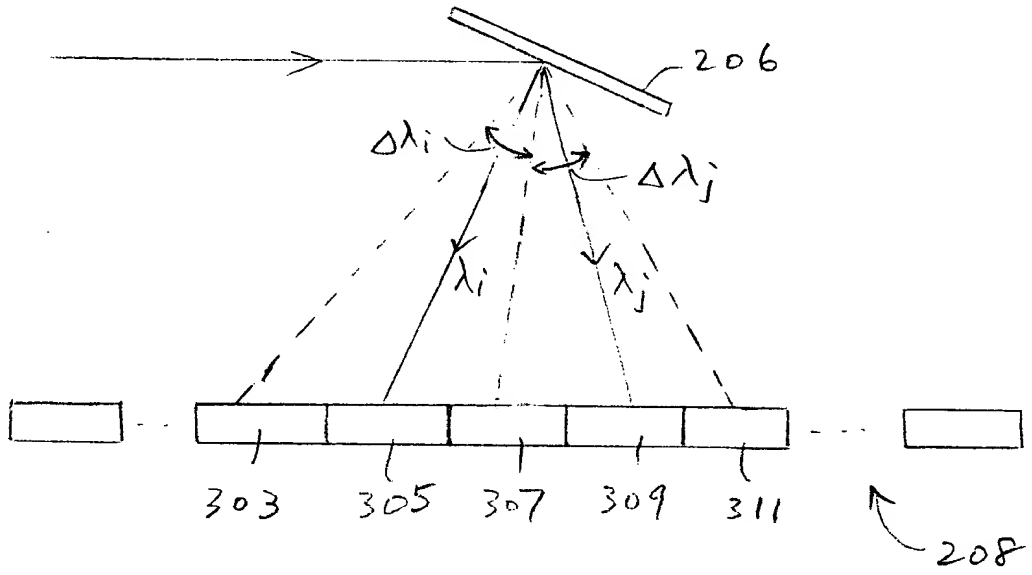

FIG. 3C

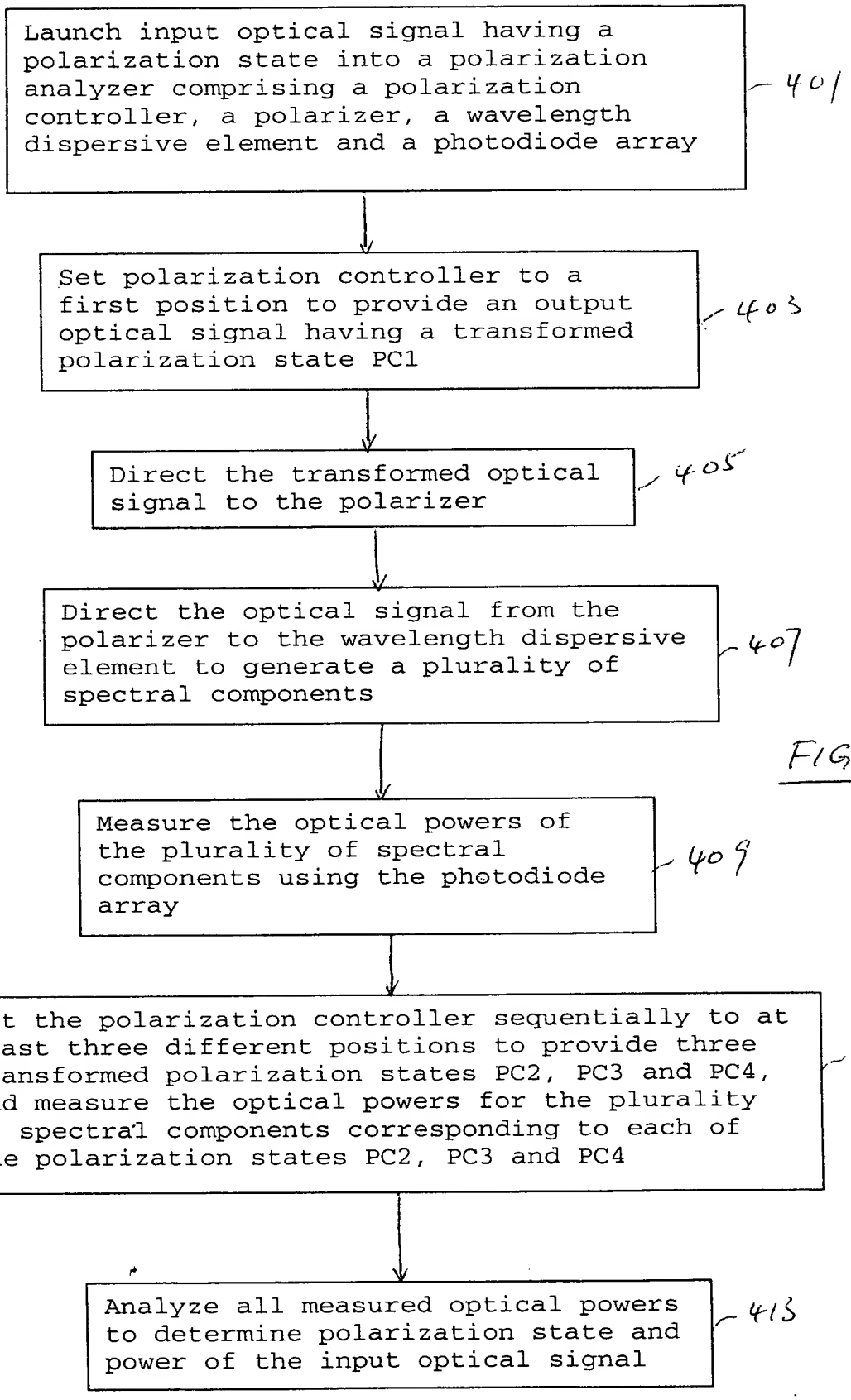
Launch input optical signal having a polarization state into a polarization analyzer comprising a polarization controller, a polarizer, a wavelength dispersive element and a photodiode array
401
Set polarization controller to a first position to provide an output optical signal having a transformed polarization state PC1
403
Direct the transformed optical signal to the polarizer
405
Direct the optical signal from the polarizer to the wavelength dispersive element to generate a plurality of spectral components
407
Measure the optical powers of the plurality of spectral components using the photodiode array
409
Set the polarization controller sequentially to at least three different positions to provide three transformed polarization states PC2, PC3 and PC4, and measure the optical powers for the plurality of spectral components corresponding to each of the polarization states PC2, PC3 and PC4
411
Analyze all measured optical powers to determine polarization state and power of the input optical signal
413

FIG. 4

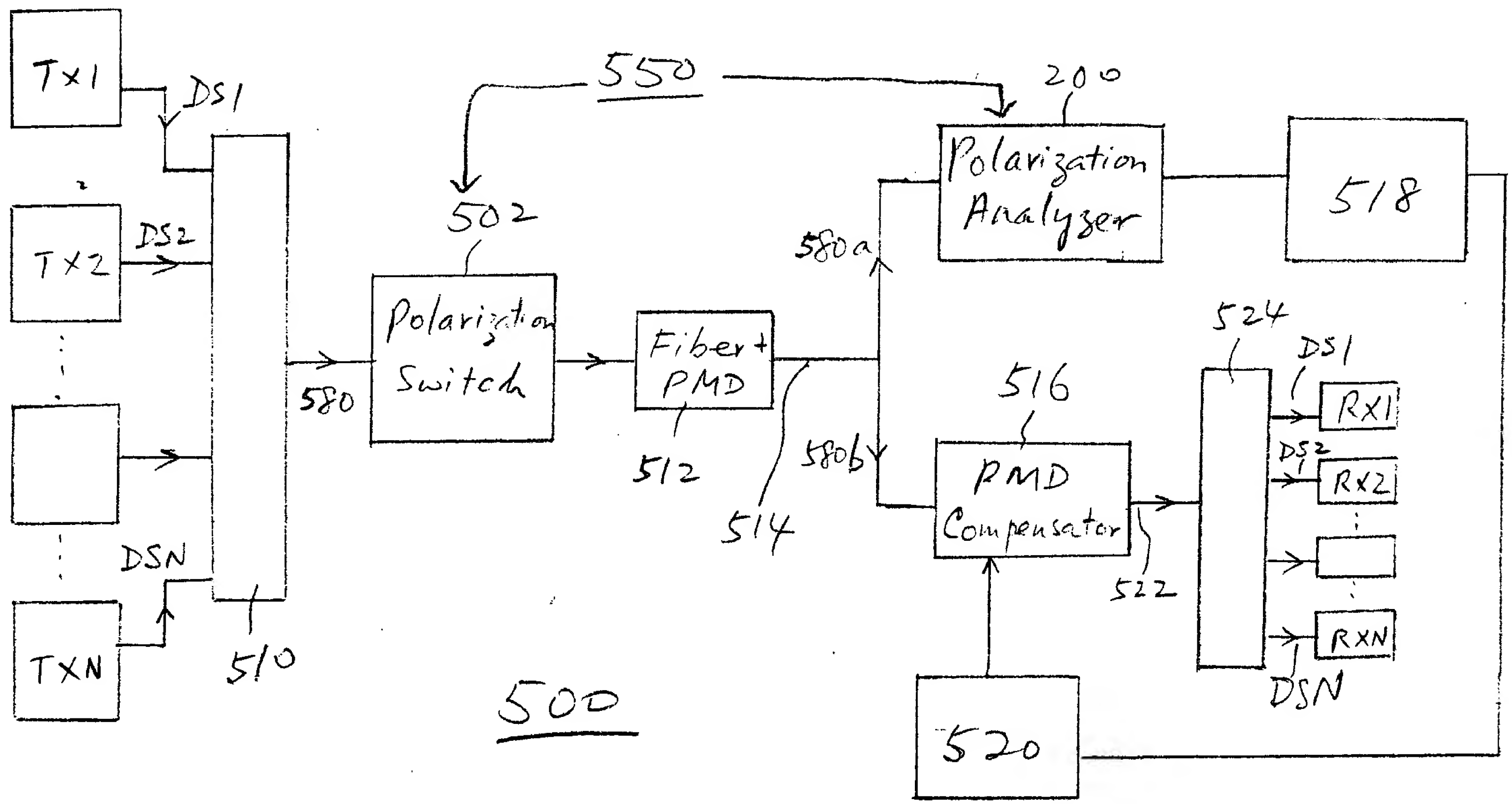
Tx1
DS1
TX2
DS2
DSN
TXN
510
580
502
Polarization Switch
550
Fiber + PMD
512
514
580a
580b
200
Polarization Analyzer
518
516
PMD Compensator
522
524
DS1
RX1
DS2
RX2
RXN
DSN
520
500

FIG. 5

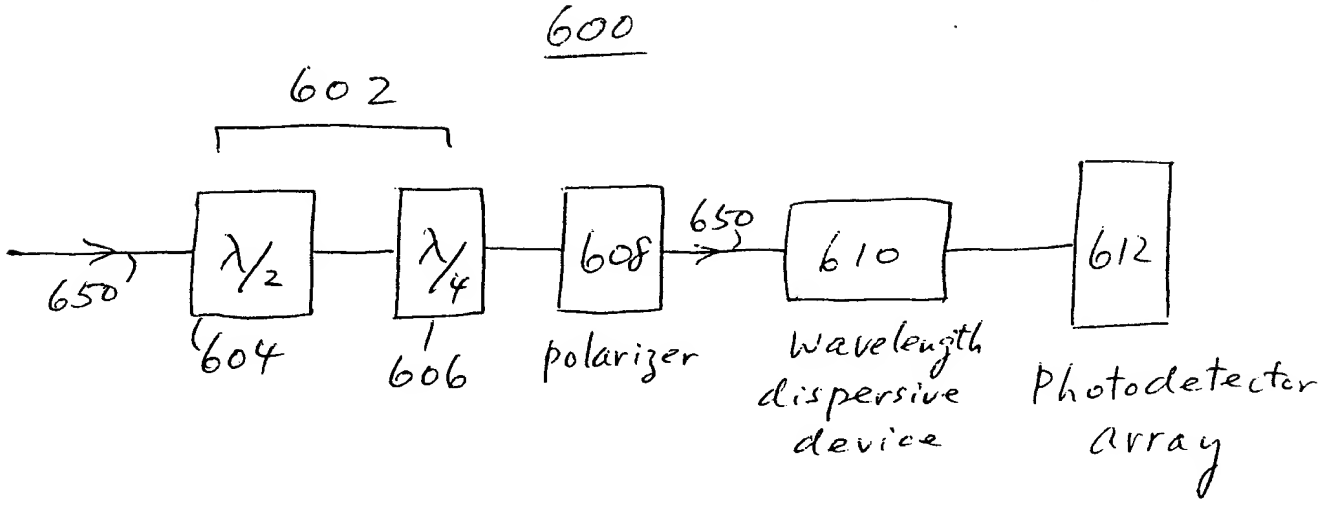
600
602
λ/2
λ/4
608
650
650
610
612
604
606
polarizer
wavelength dispersive device
Photodetector array

FIG. 6

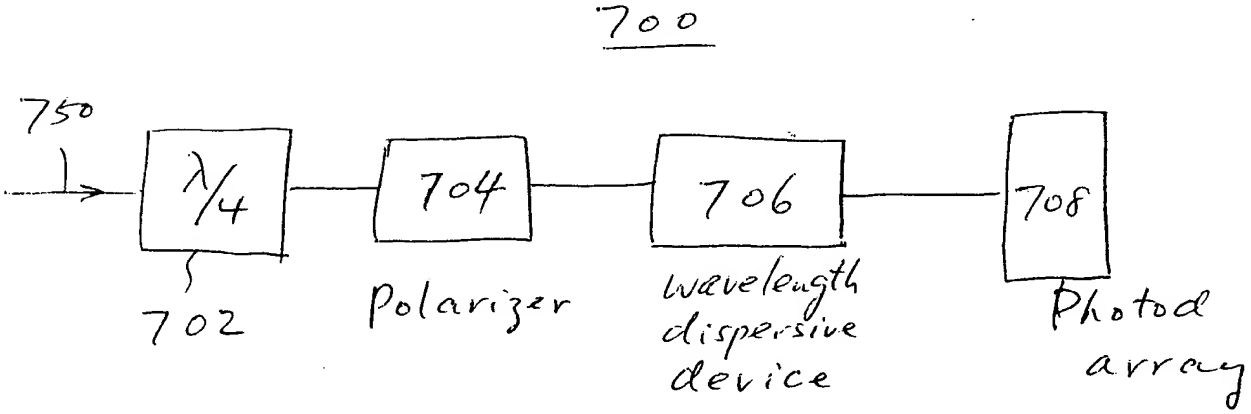
700
750
λ/4
704
706
708
702
Polarizer
wavelength dispersive device
Photod array

FIG. 7